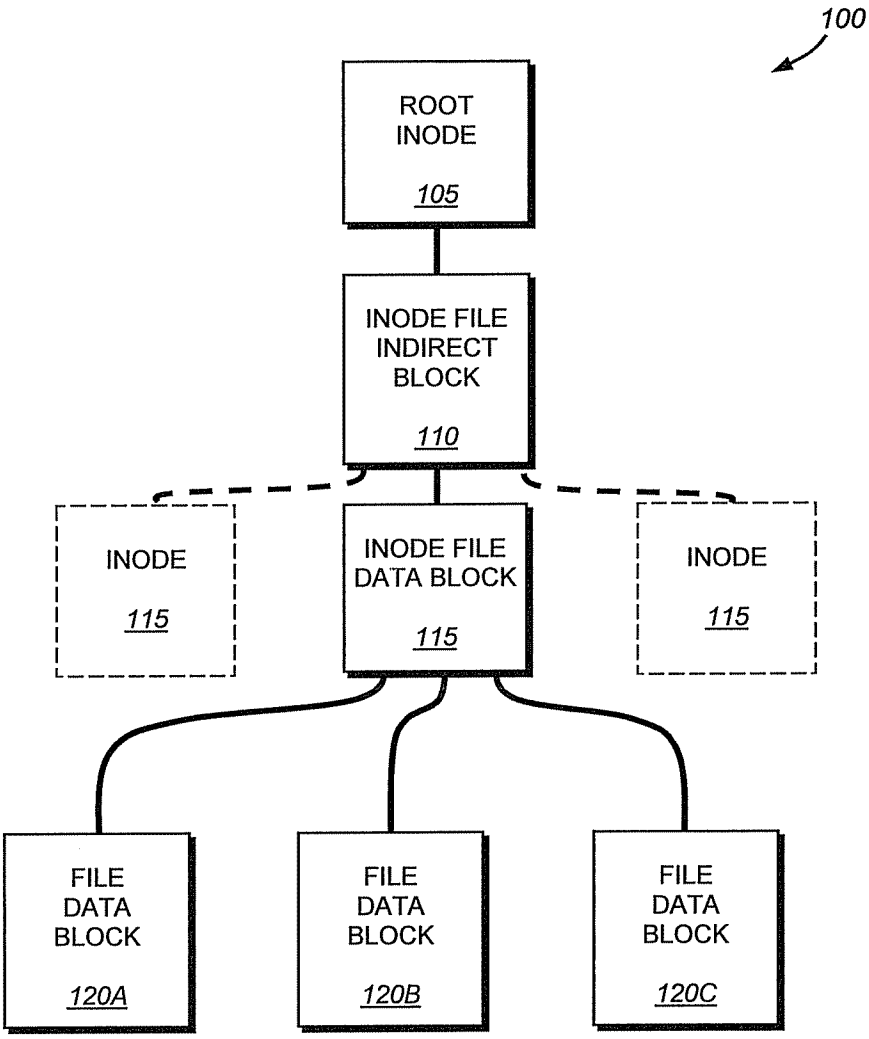

FIG. 1
(PRIOR ART)

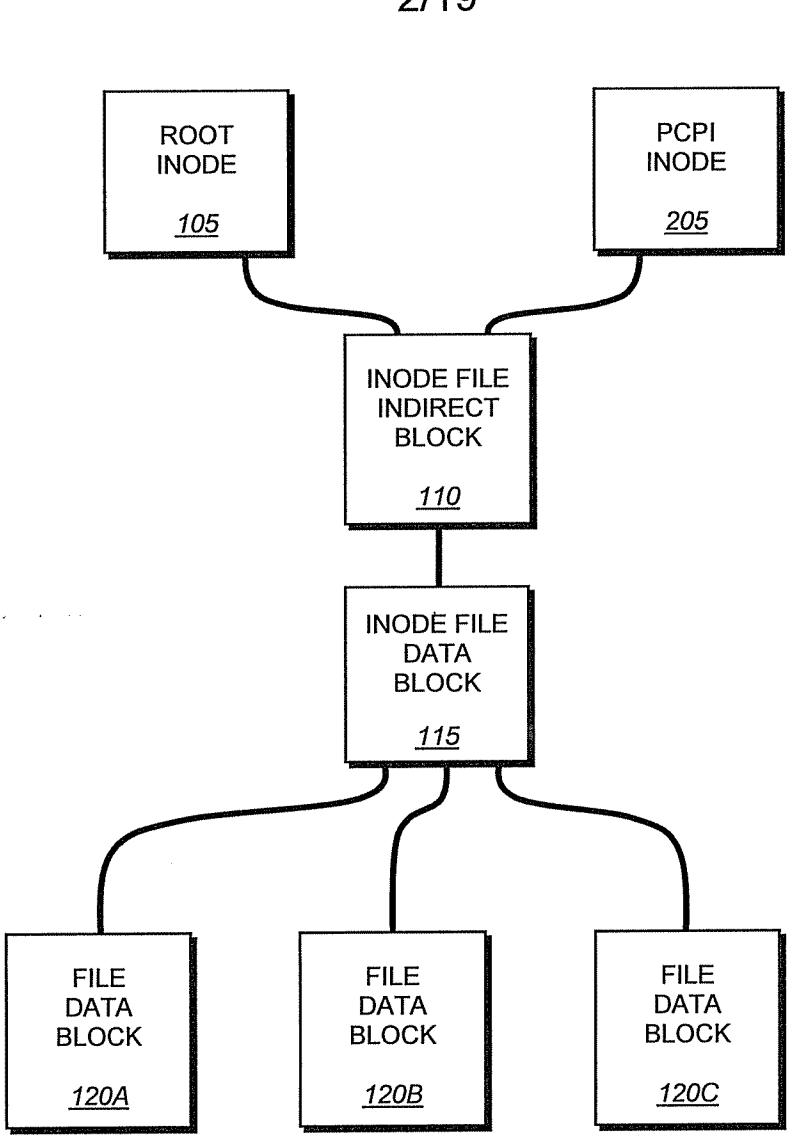

FIG. 2
(PRIOR ART)

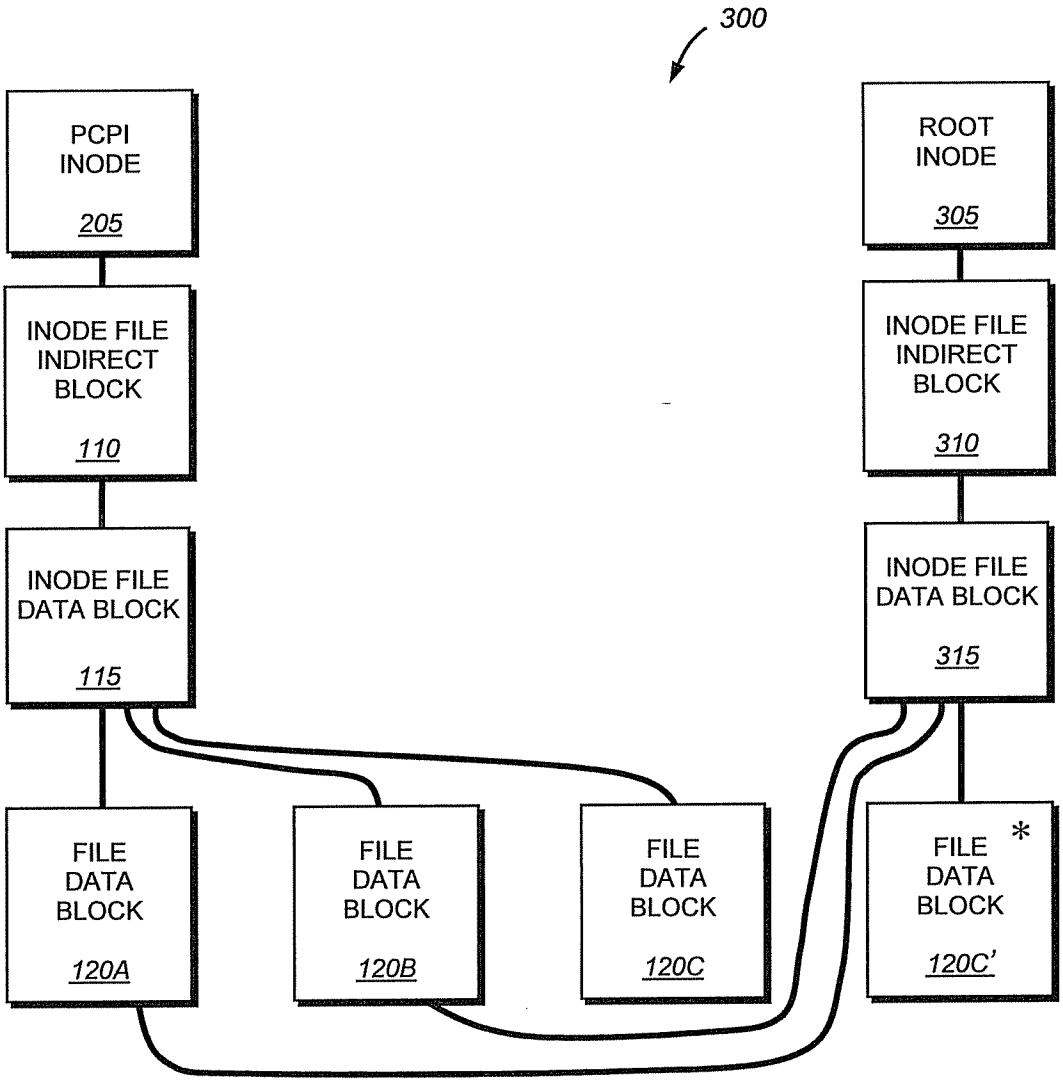

FIG. 3
(PRIOR ART)

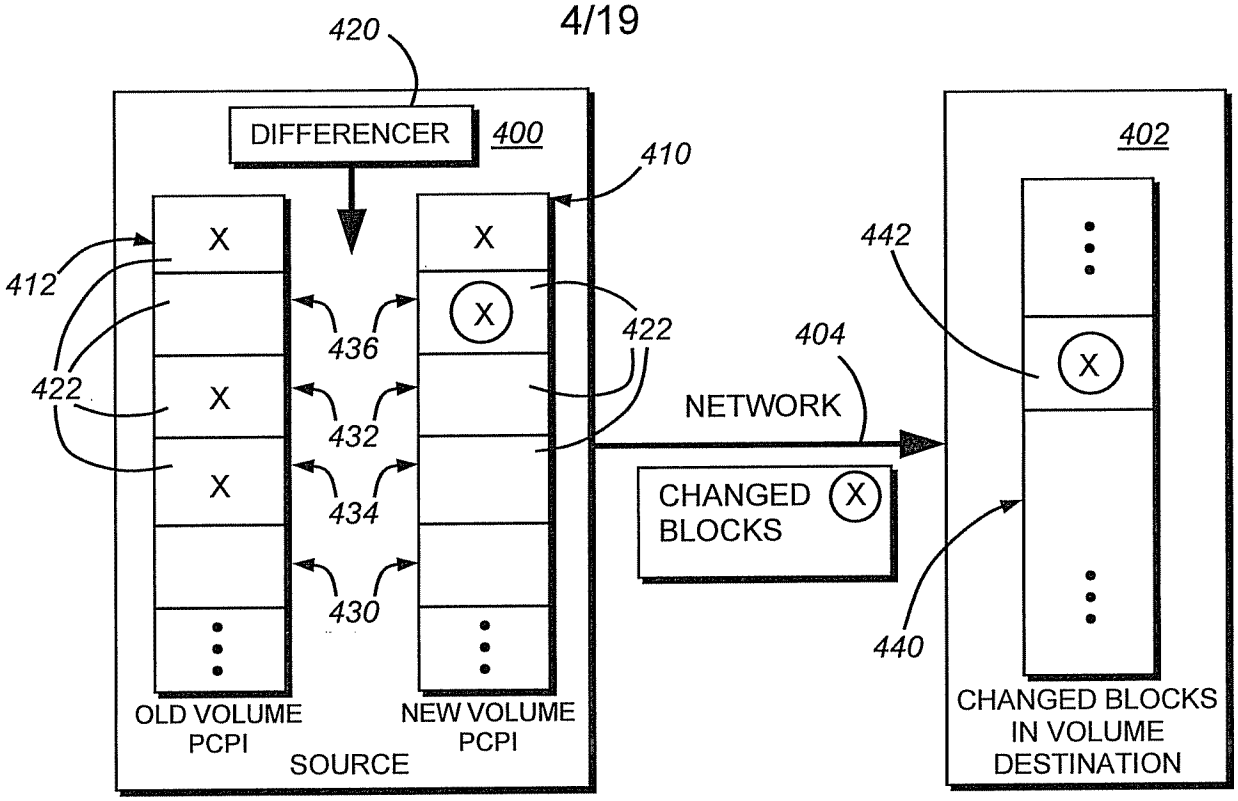

FIG. 4
(PRIOR ART)

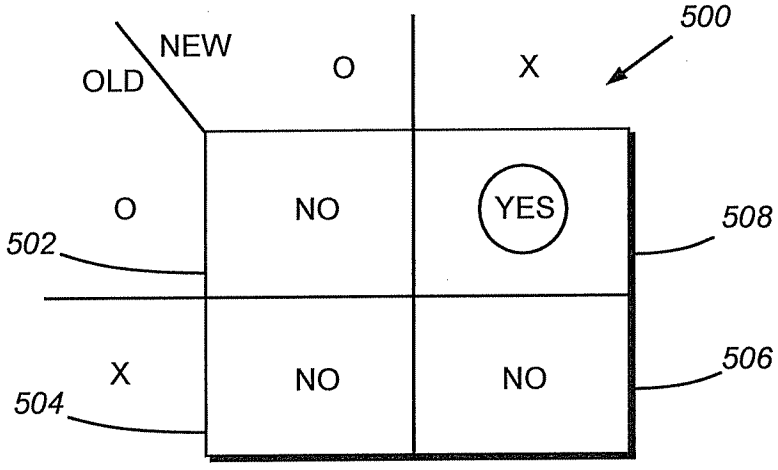

FIG. 5
(PRIOR ART)

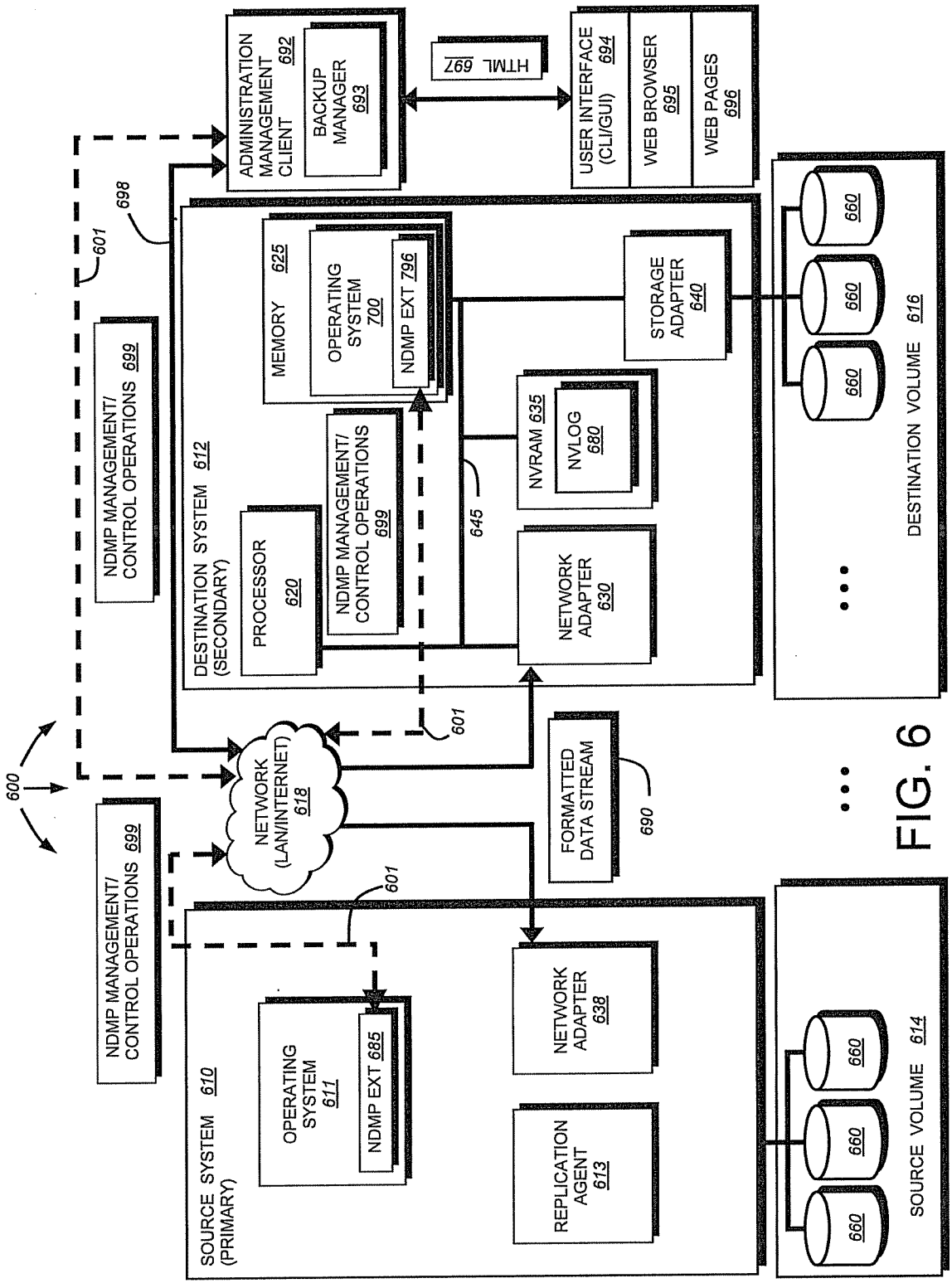
600
601
698
NDMP MANAGEMENT/ CONTROL OPERATIONS 699
ADMINISTRATION MANAGEMENT CLIENT 692
BACKUP MANAGER 693
HTML 697
USER INTERFACE (CLI/GUI) 694
WEB BROWSER 695
WEB PAGES 696
DESTINATION SYSTEM 612 (SECONDARY)
PROCESSOR 620
NDMP MANAGEMENT/ CONTROL OPERATIONS 699
MEMORY 625
OPERATING SYSTEM 700
NDMP EXT 796
NVRAM 635
NVLOG 680
645
NETWORK ADAPTER 630
STORAGE ADAPTER 640
DESTINATION VOLUME 616
660
NETWORK (LAN/INTERNET) 618
FORMATTED DATA STREAM
690
SOURCE SYSTEM 610 (PRIMARY)
OPERATING SYSTEM 611
NDMP EXT 685
NETWORK ADAPTER 638
REPLICATION AGENT 613
SOURCE VOLUME 614

FIG. 6

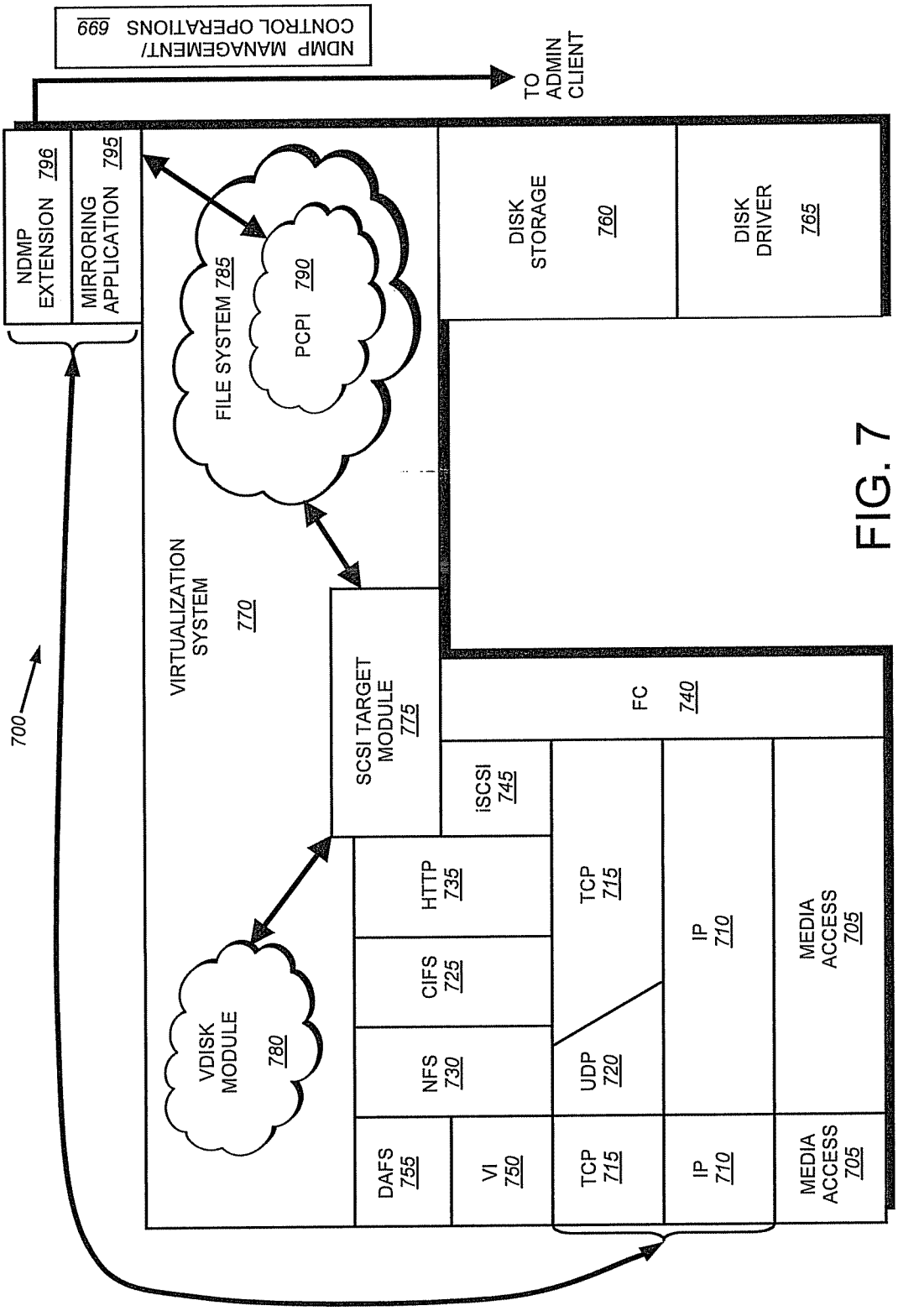
NDMP MANAGEMENT/
CONTROL OPERATIONS 699
TO
ADMIN
CLIENT
700
NDMP
EXTENSION 796
MIRRORING
APPLICATION 795
FILE SYSTEM 785
PCPI 790
DISK
STORAGE
760
DISK
DRIVER
765
VIRTUALIZATION
SYSTEM
770
SCSI TARGET
MODULE
775
FC
740
iSCSI
745
HTTP
735
CIFS
725
NFS
730
DAFS
755
VI
750
VDISK
MODULE
780
TCP
715
UDP
720
TCP
715
IP
710
IP
710
MEDIA
ACCESS
705
MEDIA
ACCESS
705

FIG. 7

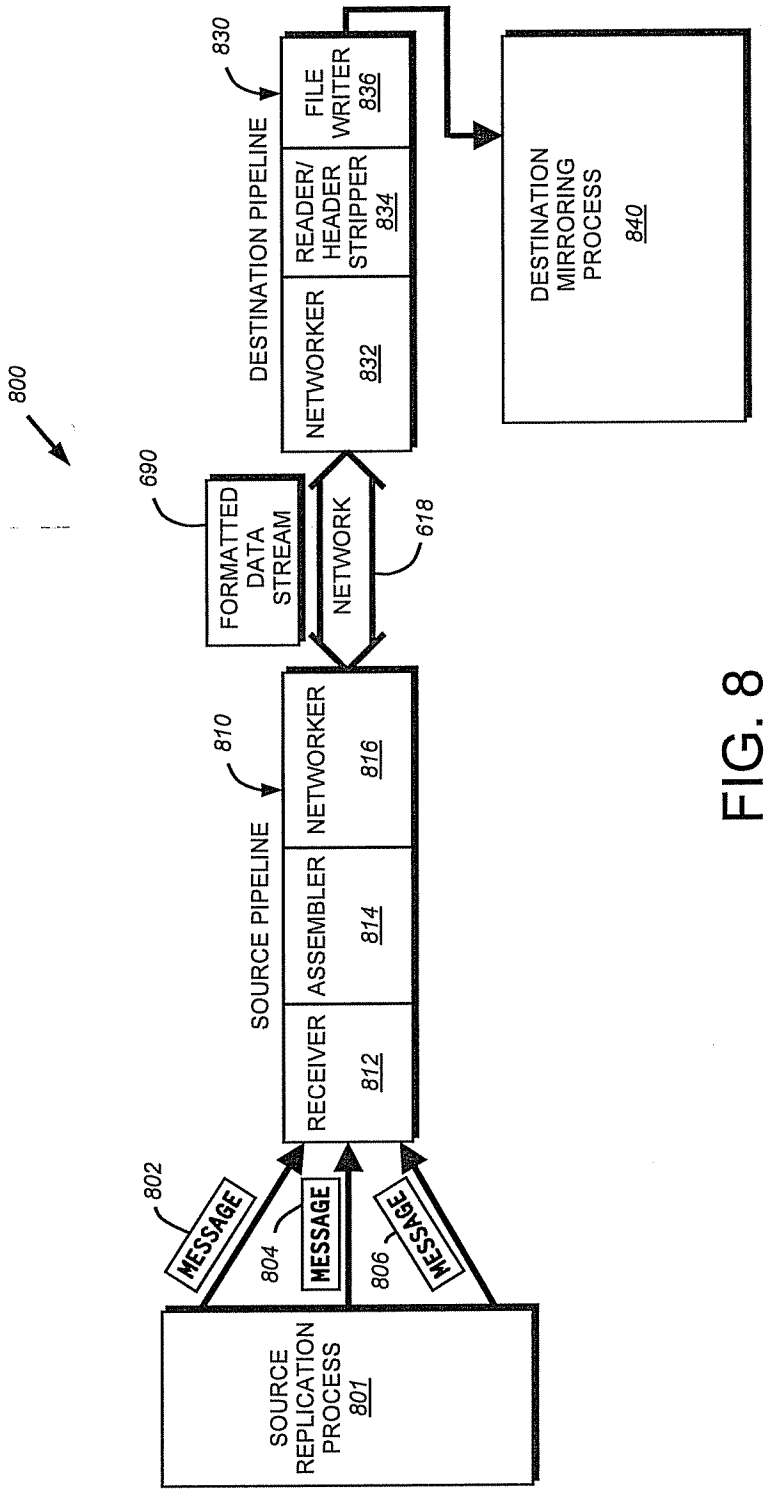
800
SOURCE REPLICATION PROCESS 801
802
MESSAGE
804
MESSAGE
806
MESSAGE
SOURCE PIPELINE
810
RECEIVER 812
ASSEMBLER 814
NETWORKER 816
690
FORMATTED DATA STREAM
NETWORK
618
DESTINATION PIPELINE
830
NETWORKER 832
READER/ HEADER STRIPPER 834
FILE WRITER 836
DESTINATION MIRRORING PROCESS 840

FIG. 8

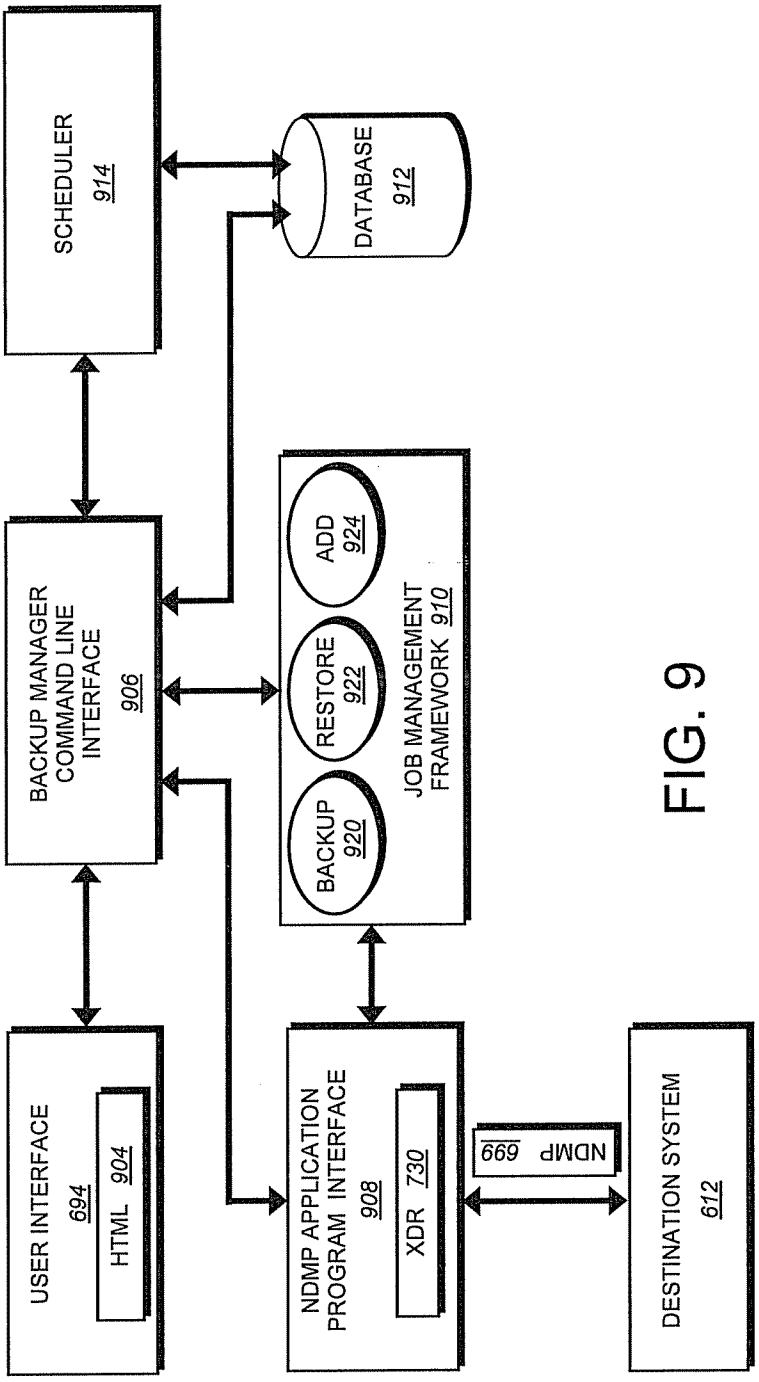
SCHEDULER
914
DATABASE
912
BACKUP MANAGER
COMMAND LINE
INTERFACE
906
JOB MANAGEMENT
FRAMEWORK 910
ADD
924
RESTORE
922
BACKUP
920
USER INTERFACE
694
HTML 904
NDMP APPLICATION
PROGRAM INTERFACE
908
XDR 730
NDMP 699
DESTINATION SYSTEM
612

FIG. 9

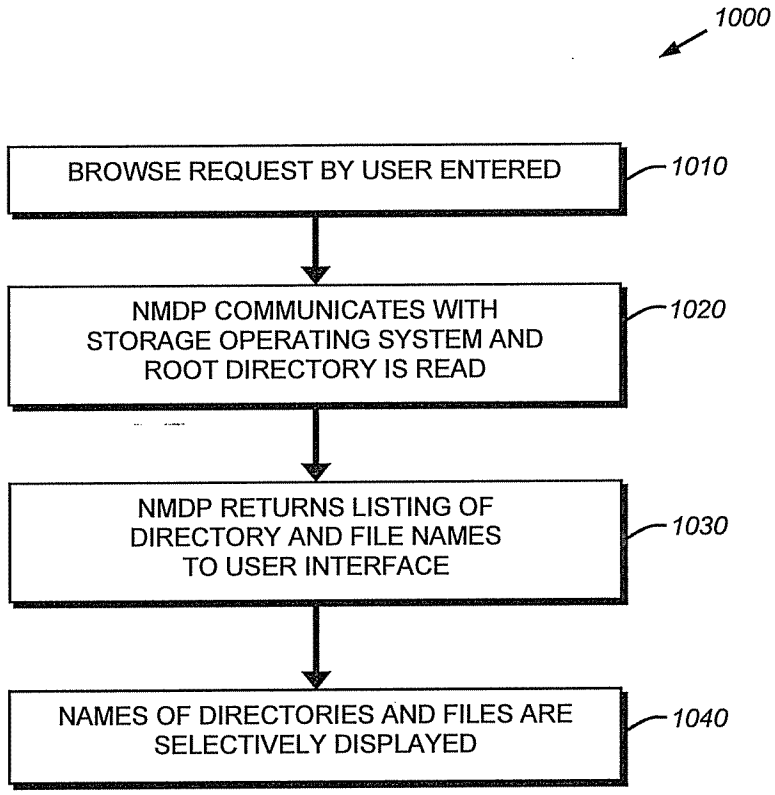
1000
BROWSE REQUEST BY USER ENTERED
1010
NMDP COMMUNICATES WITH STORAGE OPERATING SYSTEM AND ROOT DIRECTORY IS READ
1020
NMDP RETURNS LISTING OF DIRECTORY AND FILE NAMES TO USER INTERFACE
1030
NAMES OF DIRECTORIES AND FILES ARE SELECTIVELY DISPLAYED
1040

FIG. 10

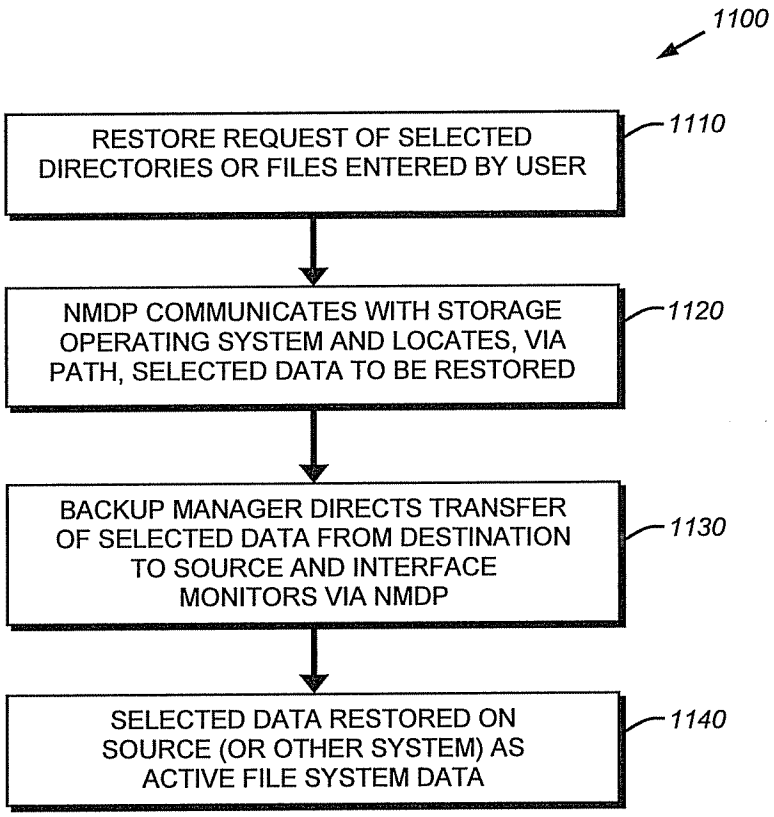
1100
RESTORE REQUEST OF SELECTED DIRECTORIES OR FILES ENTERED BY USER
1110
NMDP COMMUNICATES WITH STORAGE OPERATING SYSTEM AND LOCATES, VIA PATH, SELECTED DATA TO BE RESTORED
1120
BACKUP MANAGER DIRECTS TRANSFER OF SELECTED DATA FROM DESTINATION TO SOURCE AND INTERFACE MONITORS VIA NMDP
1130
SELECTED DATA RESTORED ON SOURCE (OR OTHER SYSTEM) AS ACTIVE FILE SYSTEM DATA
1140

FIG. 11

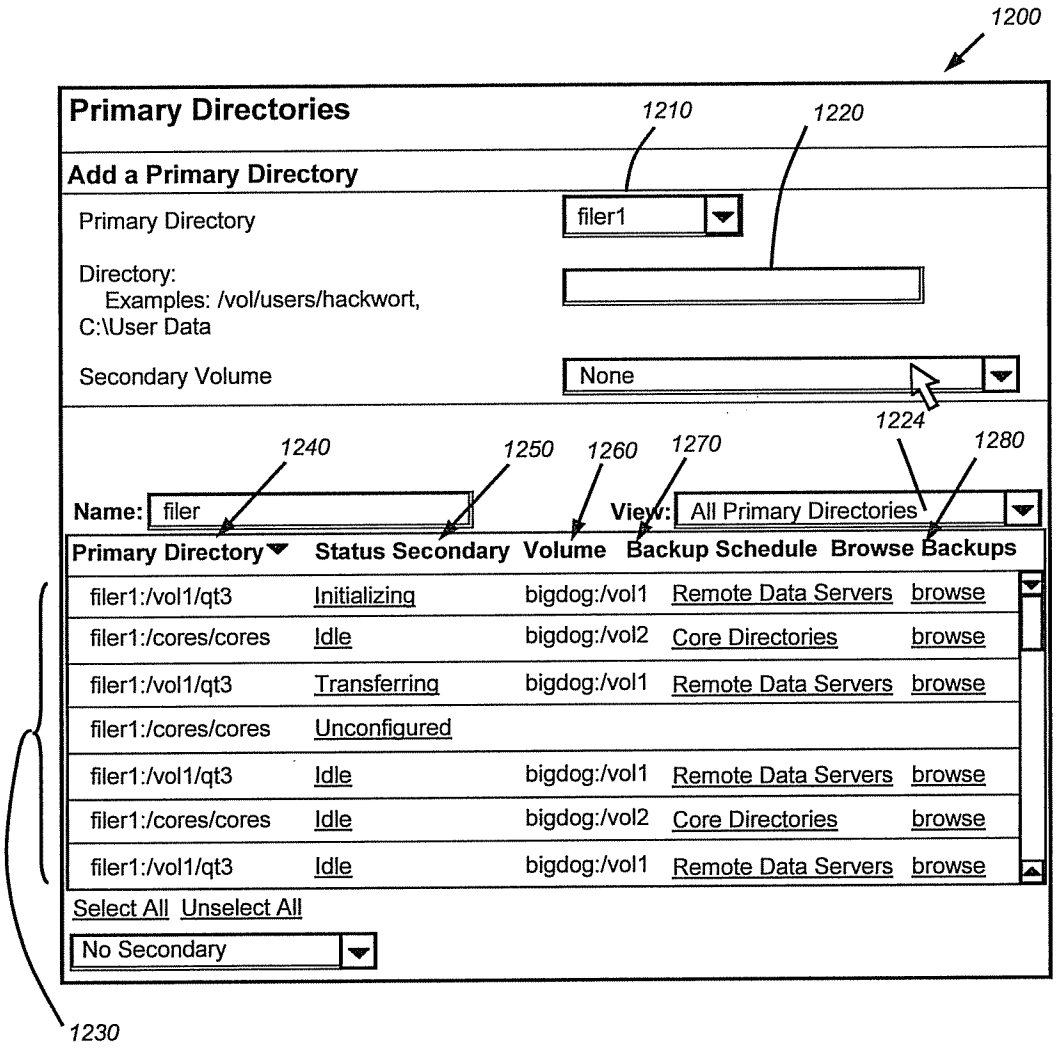
1200
Primary Directories
1210
1220
Add a Primary Directory
Primary Directory
filer1
Directory:
Examples: /vol/users/hackwort,
C:\User Data
Secondary Volume
None
1224
1240
1250
1260
1270
1280
Name: filer
View: All Primary Directories
Primary Directory
Status Secondary
Volume
Backup Schedule
Browse Backups
filer1:/vol1/qt3 Initializing bigdog:/vol1 Remote Data Servers browse
filer1:/cores/cores Idle bigdog:/vol2 Core Directories browse
filer1:/vol1/qt3 Transferring bigdog:/vol1 Remote Data Servers browse
filer1:/cores/cores Unconfigured
filer1:/vol1/qt3 Idle bigdog:/vol1 Remote Data Servers browse
filer1:/cores/cores Idle bigdog:/vol2 Core Directories browse
filer1:/vol1/qt3 Idle bigdog:/vol1 Remote Data Servers browse
Select All Unselect All
No Secondary
1230

FIG. 12

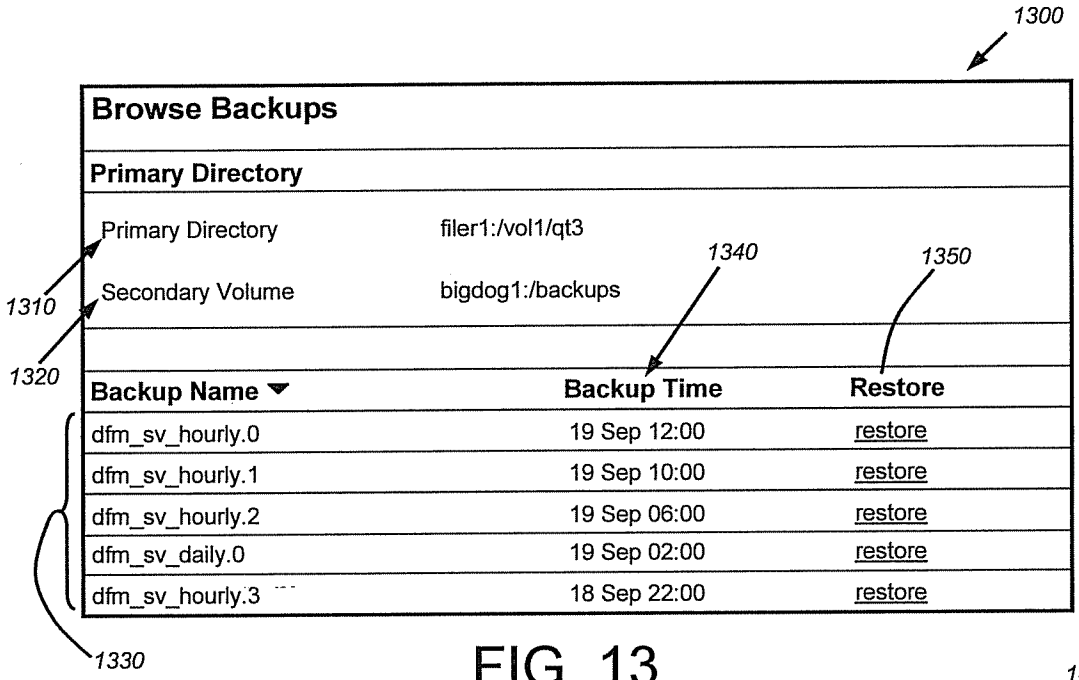
1300
Browse Backups
Primary Directory
Primary Directory
filer1:/vol1/qt3
Secondary Volume
bigdog1:/backups
1310
1320
1340
1350
Backup Name
Backup Time
Restore
dfm_sv_hourly.0
19 Sep 12:00
restore
dfm_sv_hourly.1
19 Sep 10:00
restore
dfm_sv_hourly.2
19 Sep 06:00
restore
dfm_sv_daily.0
19 Sep 02:00
restore
dfm_sv_hourly.3
18 Sep 22:00
restore
1330

FIG. 13

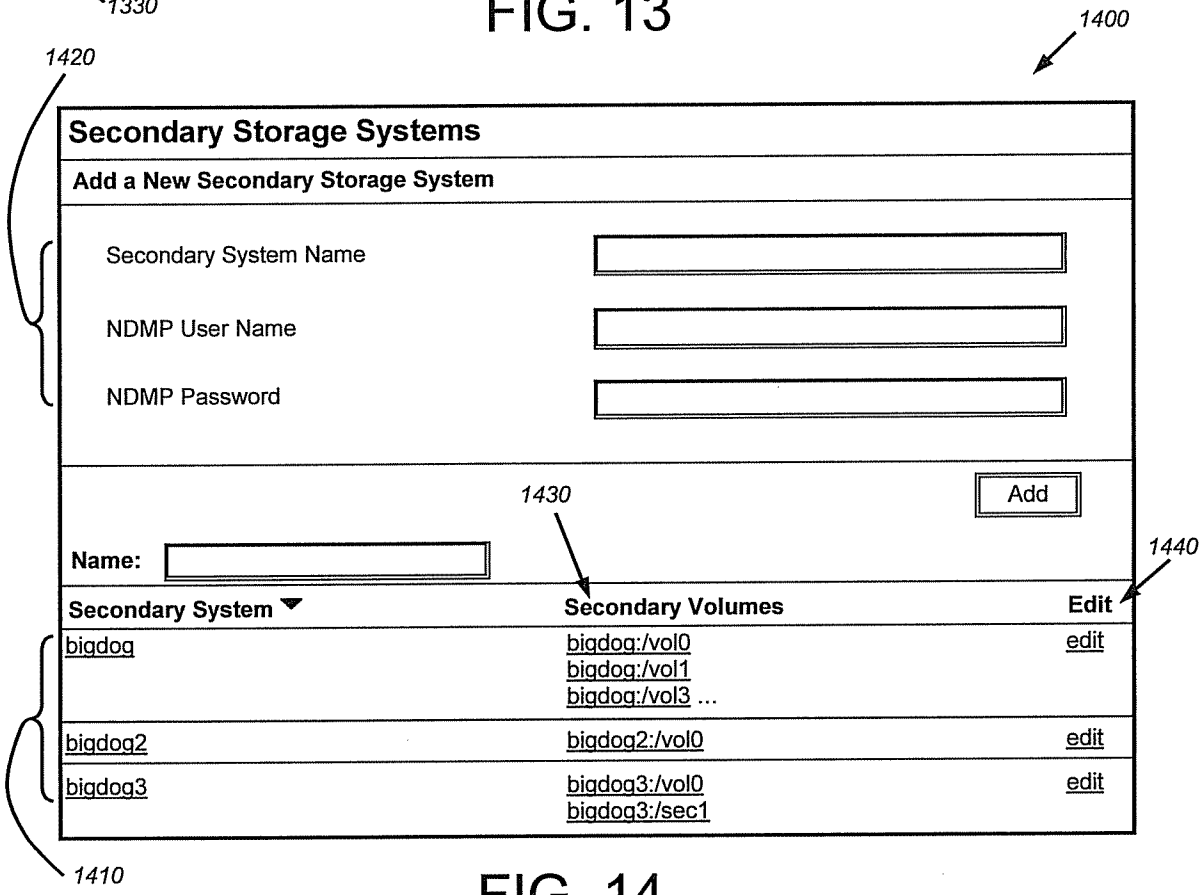
1400
1420
Secondary Storage Systems
Add a New Secondary Storage System
Secondary System Name
NDMP User Name
NDMP Password
Add
1430
Name:
1440
Secondary System
Secondary Volumes
Edit
bigdog
bigdog:/vol0
bigdog:/vol1
bigdog:/vol3 ...
edit
bigdog2
bigdog2:/vol0
edit
bigdog3
bigdog3:/vol0
bigdog3:/sec1
edit
1410

FIG. 14

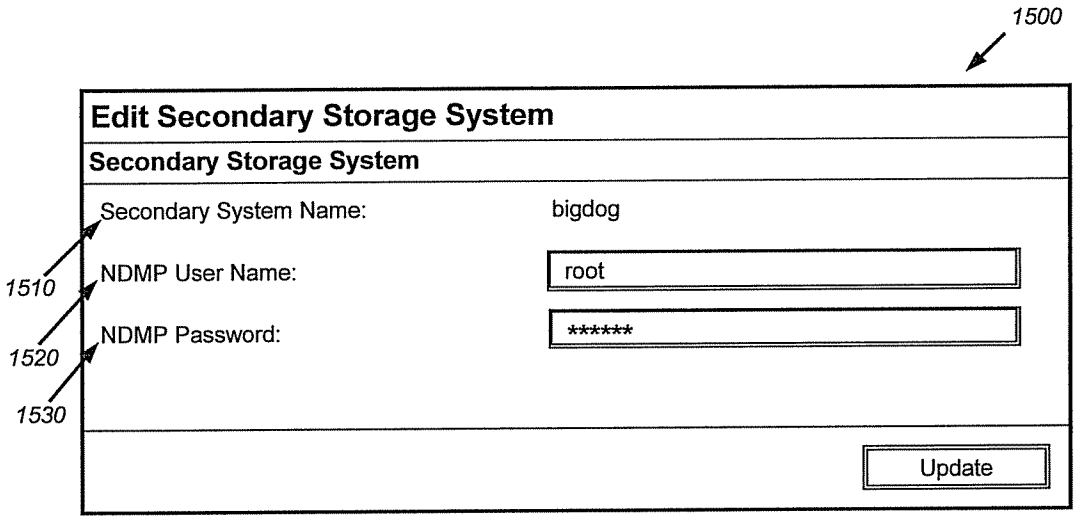
1500
Edit Secondary Storage System
Secondary Storage System
Secondary System Name:
bigdog
1510
NDMP User Name:
root
1520
NDMP Password:
******
1530
Update

FIG. 15

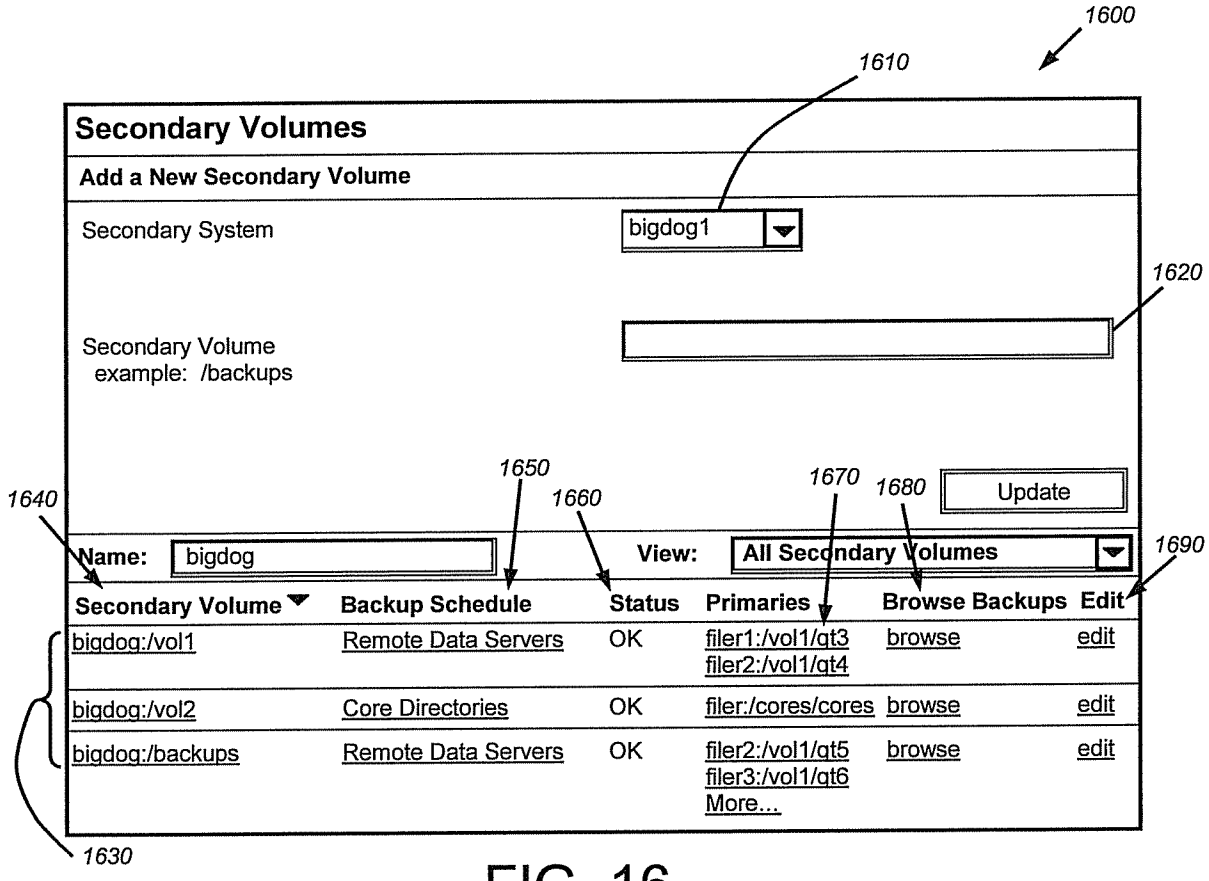
1600
1610
Secondary Volumes
Add a New Secondary Volume
Secondary System
bigdog1
1620
Secondary Volume
example: /backups
1650
1660
1670
1680
Update
1640
Name:
bigdog
View:
All Secondary Volumes
1690
Secondary Volume
Backup Schedule
Status
Primaries
Browse Backups
Edit
bigdog:/vol1
Remote Data Servers
OK
filer1:/vol1/qt3
filer2:/vol1/qt4
browse
edit
bigdog:/vol2
Core Directories
OK
filer:/cores/cores
browse
edit
bigdog:/backups
Remote Data Servers
OK
filer2:/vol1/qt5
filer3:/vol1/qt6
More...
browse
edit
1630

FIG. 16

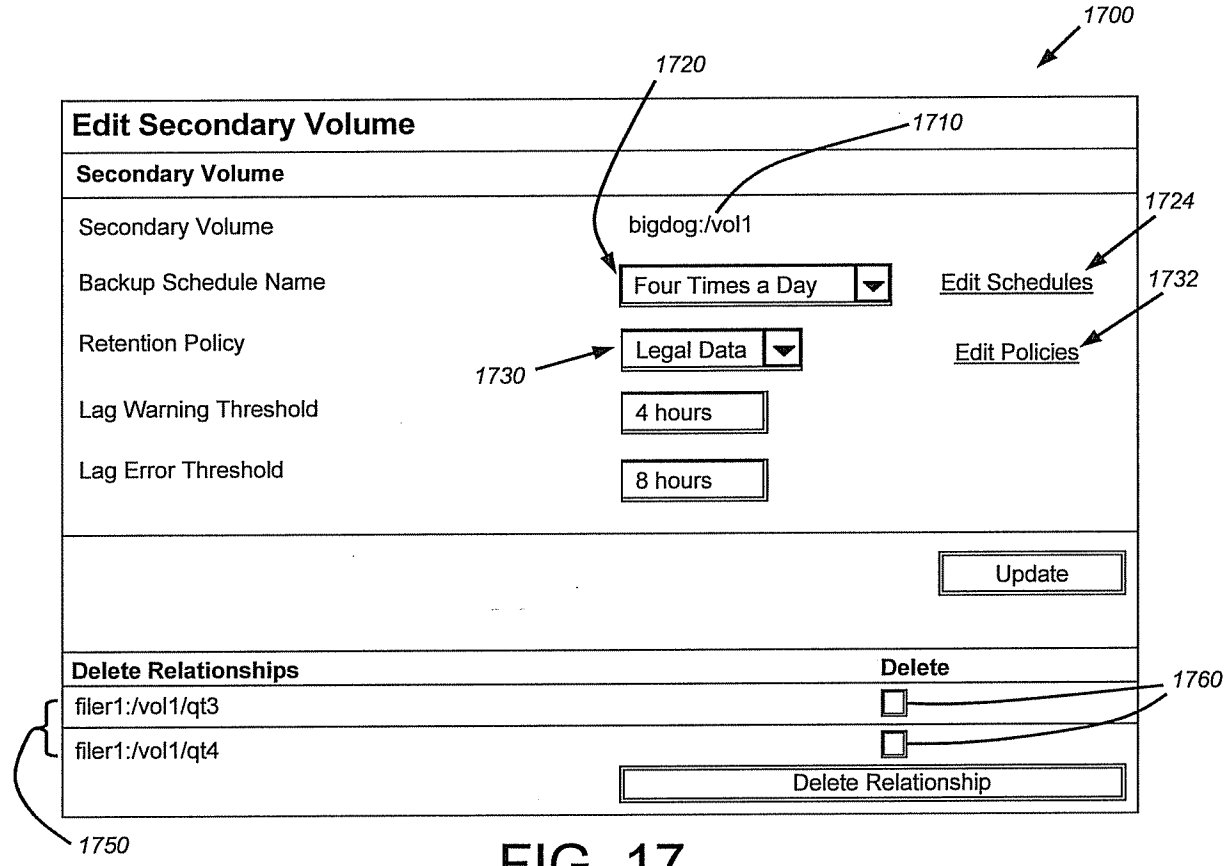
1700
1720
1710
Edit Secondary Volume
Secondary Volume
Secondary Volume
bigdog:/vol1
1724
Backup Schedule Name
Four Times a Day
Edit Schedules
1732
Retention Policy
Legal Data
Edit Policies
1730
Lag Warning Threshold
4 hours
Lag Error Threshold
8 hours
Update
Delete Relationships
Delete
1760
filer1:/vol1/qt3
filer1:/vol1/qt4
Delete Relationship
1750

FIG. 17

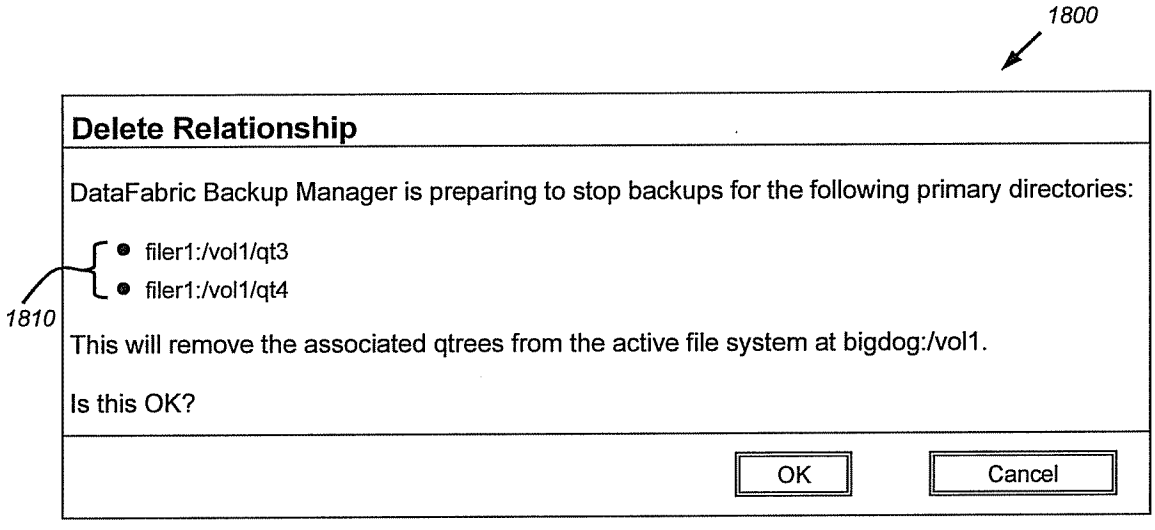
1800
Delete Relationship
DataFabric Backup Manager is preparing to stop backups for the following primary directories:
filer1:/vol1/qt3
filer1:/vol1/qt4
1810
This will remove the associated qtrees from the active file system at bigdog:/vol1.
Is this OK?
OK
Cancel

FIG. 18

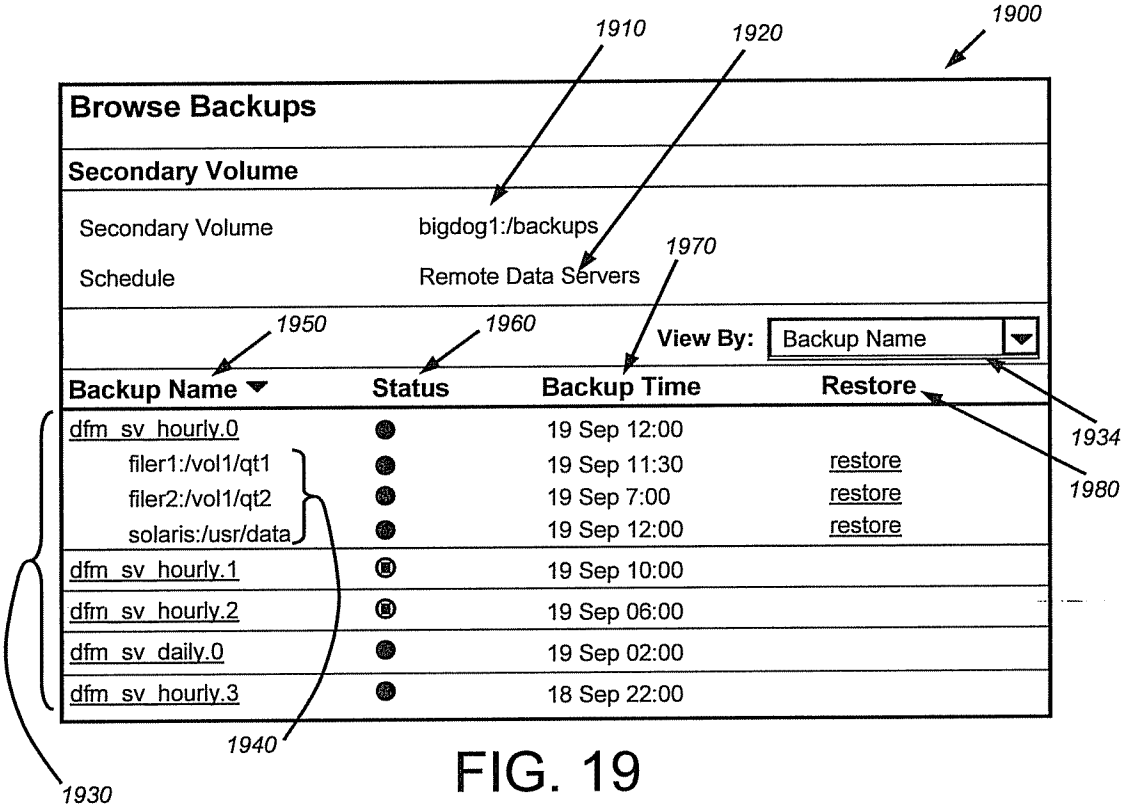
1910
1920
1900
Browse Backups
Secondary Volume
Secondary Volume
bigdog1:/backups
Schedule
Remote Data Servers
1970
1950
1960
View By:
Backup Name
Backup Name
Status
Backup Time
Restore
1934
dfm_sv_hourly.0
19 Sep 12:00
filer1:/vol1/qt1
19 Sep 11:30
restore
1980
filer2:/vol1/qt2
19 Sep 7:00
restore
solaris:/usr/data
19 Sep 12:00
restore
dfm_sv_hourly.1
19 Sep 10:00
dfm_sv_hourly.2
19 Sep 06:00
dfm_sv_daily.0
19 Sep 02:00
dfm_sv_hourly.3
18 Sep 22:00
1940
1930

FIG. 19

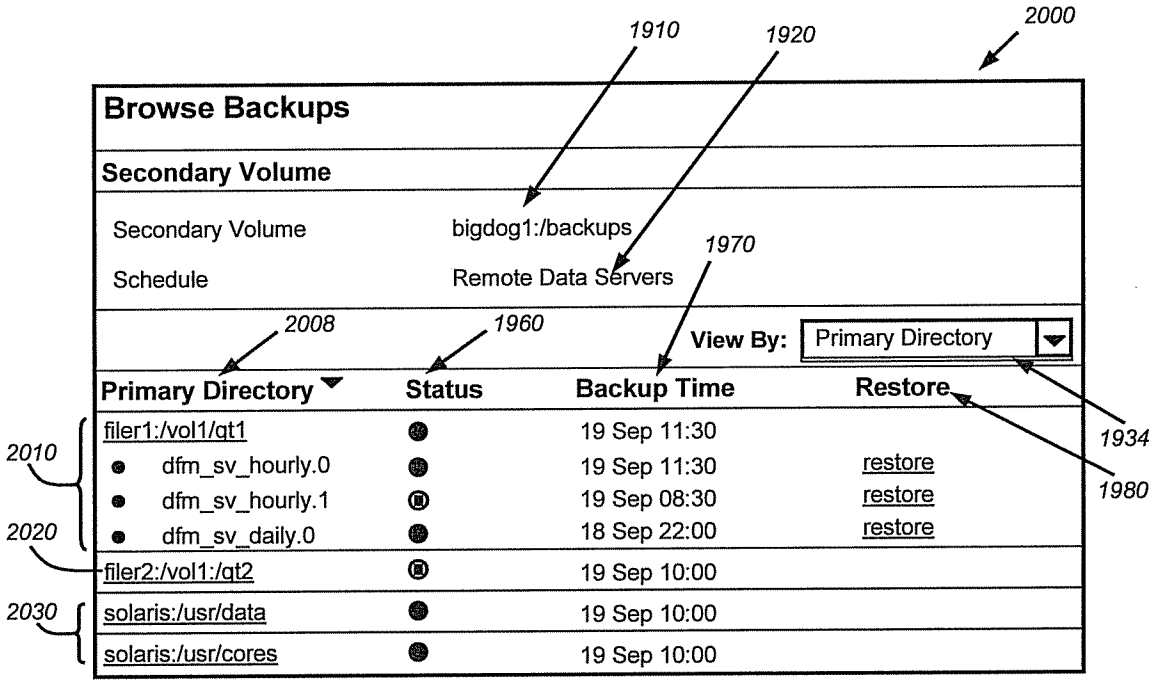
2000
1910
1920
Browse Backups
Secondary Volume
Secondary Volume
bigdog1:/backups
Schedule
Remote Data Servers
1970
2008
1960
View By:
Primary Directory
Primary Directory
Status
Backup Time
Restore
1934
2010
filer1:/vol1/qt1
19 Sep 11:30
dfm_sv_hourly.0
19 Sep 11:30
restore
1980
dfm_sv_hourly.1
19 Sep 08:30
restore
2020
dfm_sv_daily.0
18 Sep 22:00
restore
filer2:/vol1:/qt2
19 Sep 10:00
2030
solaris:/usr/data
19 Sep 10:00
solaris:/usr/cores
19 Sep 10:00

FIG. 20

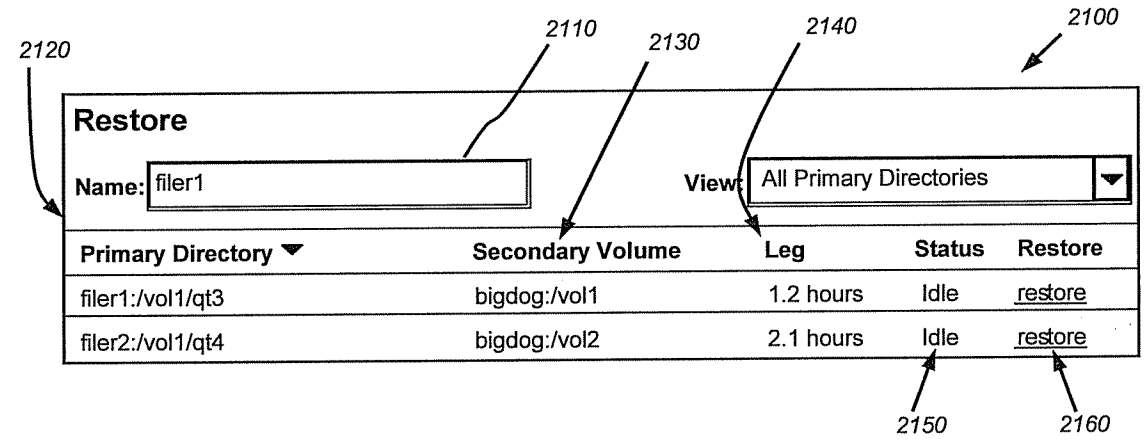
2120
2110
2130
2140
2100
Restore
Name: filer1
View: All Primary Directories
Primary Directory
Secondary Volume
Leg
Status
Restore
filer1:/vol1/qt3
bigdog:/vol1
1.2 hours
Idle
restore
filer2:/vol1/qt4
bigdog:/vol2
2.1 hours
Idle
restore
2150
2160

FIG. 21

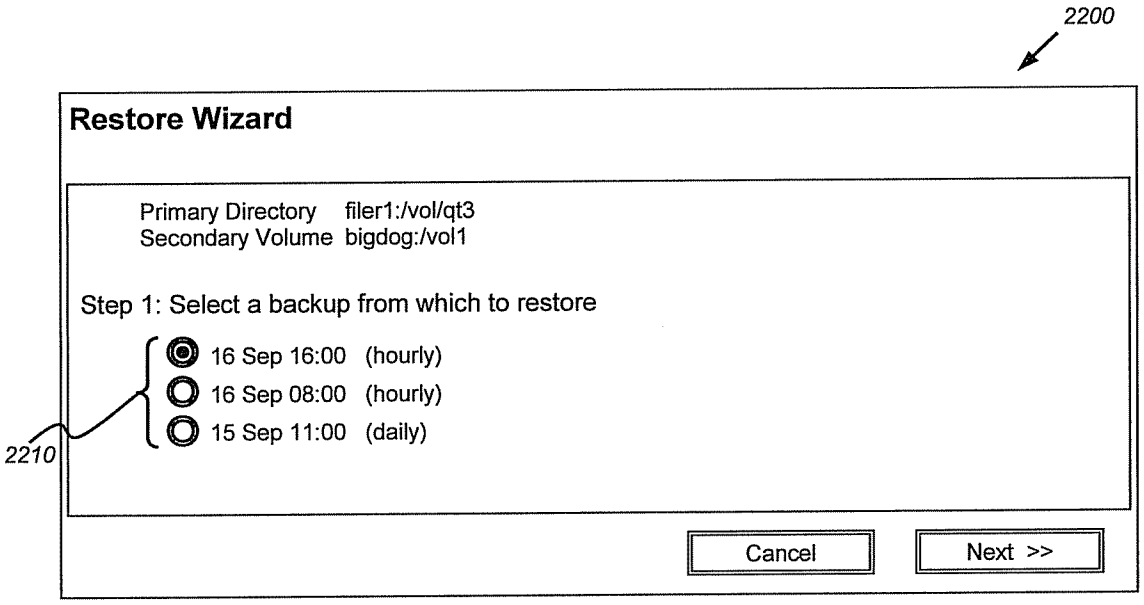
2200
Restore Wizard
Primary Directory filer1:/vol/qt3
Secondary Volume bigdog:/vol1
Step 1: Select a backup from which to restore
16 Sep 16:00 (hourly)
16 Sep 08:00 (hourly)
15 Sep 11:00 (daily)
2210
Cancel
Next >>

FIG. 22

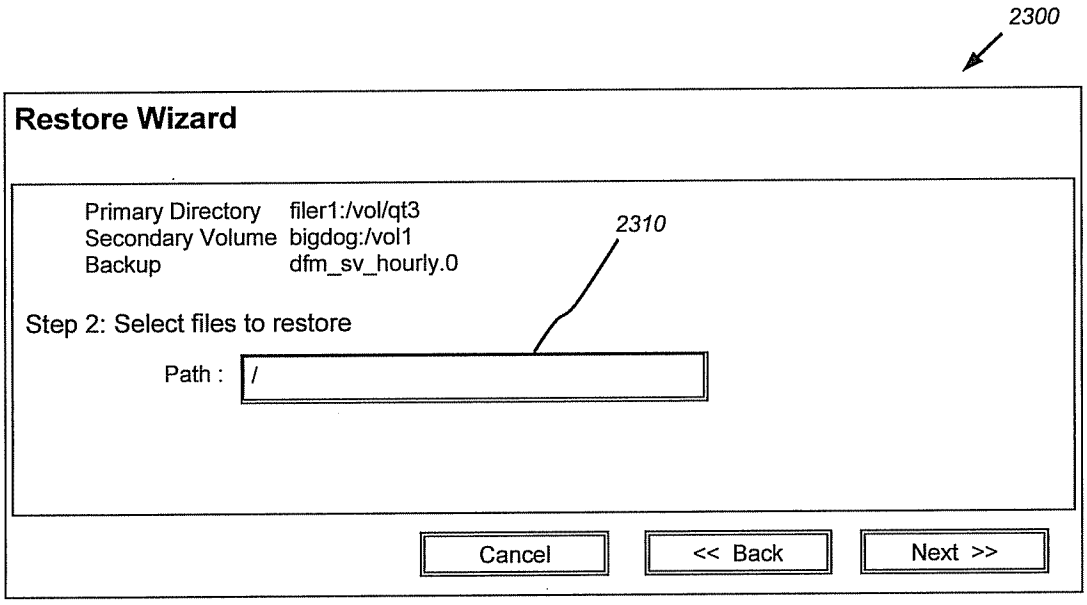
2300
Restore Wizard
Primary Directory filer1:/vol/qt3
Secondary Volume bigdog:/vol1
Backup dfm_sv_hourly.0
2310
Step 2: Select files to restore
Path : /
Cancel
<< Back
Next >>

FIG. 23

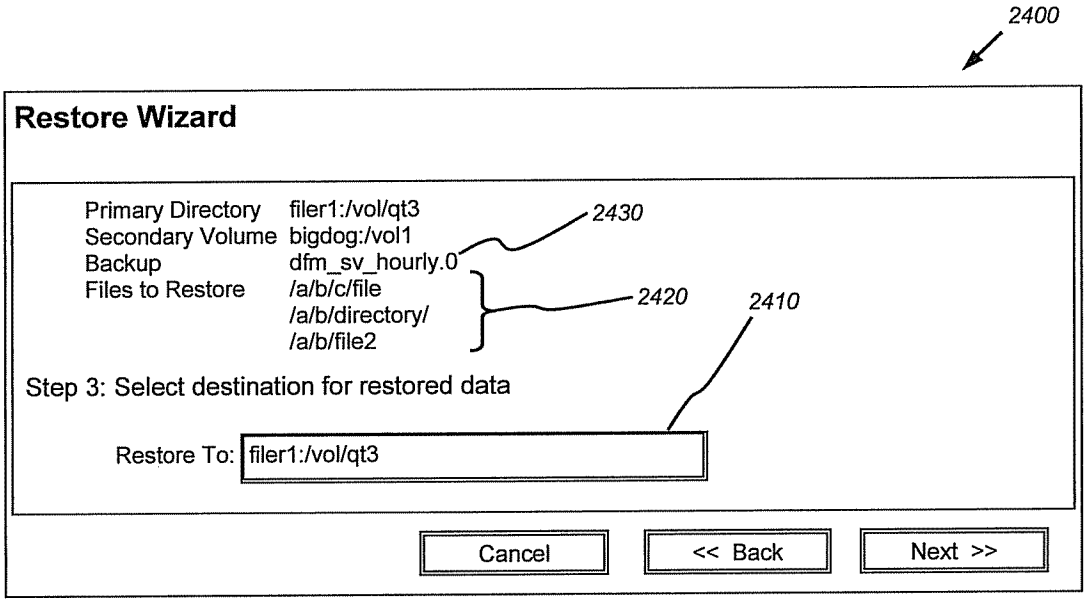
2400
Restore Wizard
Primary Directory filer1:/vol/qt3
Secondary Volume bigdog:/vol1
Backup dfm_sv_hourly.0
2430
Files to Restore /a/b/c/file
/a/b/directory/
/a/b/file2
2420
2410
Step 3: Select destination for restored data
Restore To: filer1:/vol/qt3
Cancel
<< Back
Next >>

FIG. 24

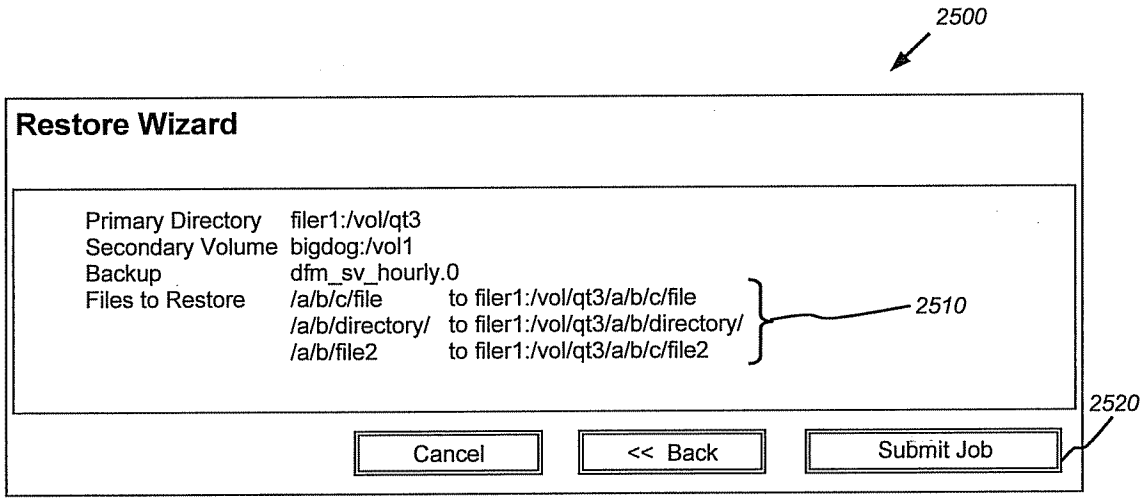
2500
Restore Wizard
Primary Directory filer1:/vol/qt3
Secondary Volume bigdog:/vol1
Backup dfm_sv_hourly.0
Files to Restore /a/b/c/file to filer1:/vol/qt3/a/b/c/file
/a/b/directory/ to filer1:/vol/qt3/a/b/directory/
/a/b/file2 to filer1:/vol/qt3/a/b/c/file2
2510
2520
Cancel
<< Back
Submit Job

FIG. 25

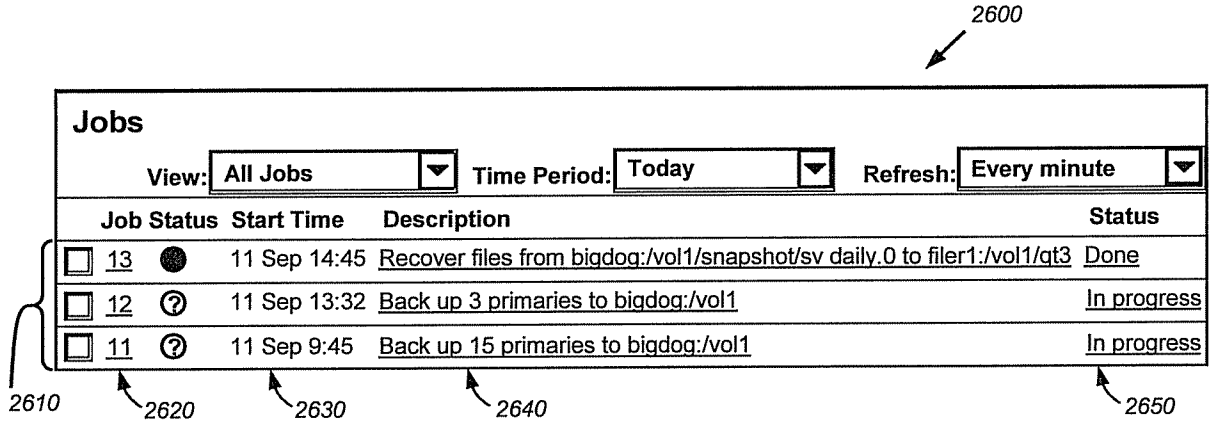
2600
Jobs
View: All Jobs
Time Period: Today
Refresh: Every minute
Job Status Start Time Description Status
13 11 Sep 14:45 Recover files from bigdog:/vol1/snapshot/sv daily.0 to filer1:/vol1/qt3 Done
12 11 Sep 13:32 Back up 3 primaries to bigdog:/vol1 In progress
11 11 Sep 9:45 Back up 15 primaries to bigdog:/vol1 In progress
2610
2620
2630
2640
2650

FIG. 26

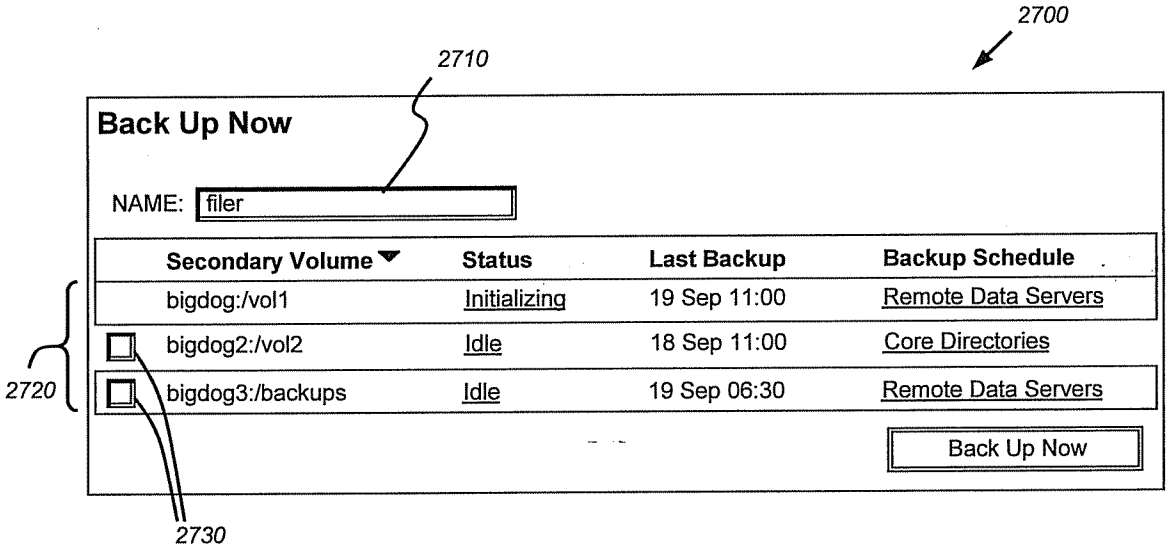
2700
2710
Back Up Now
NAME: filer
Secondary Volume
Status
Last Backup
Backup Schedule
bigdog:/vol1
Initializing
19 Sep 11:00
Remote Data Servers
bigdog2:/vol2
Idle
18 Sep 11:00
Core Directories
bigdog3:/backups
Idle
19 Sep 06:30
Remote Data Servers
Back Up Now
2720
2730

FIG. 27

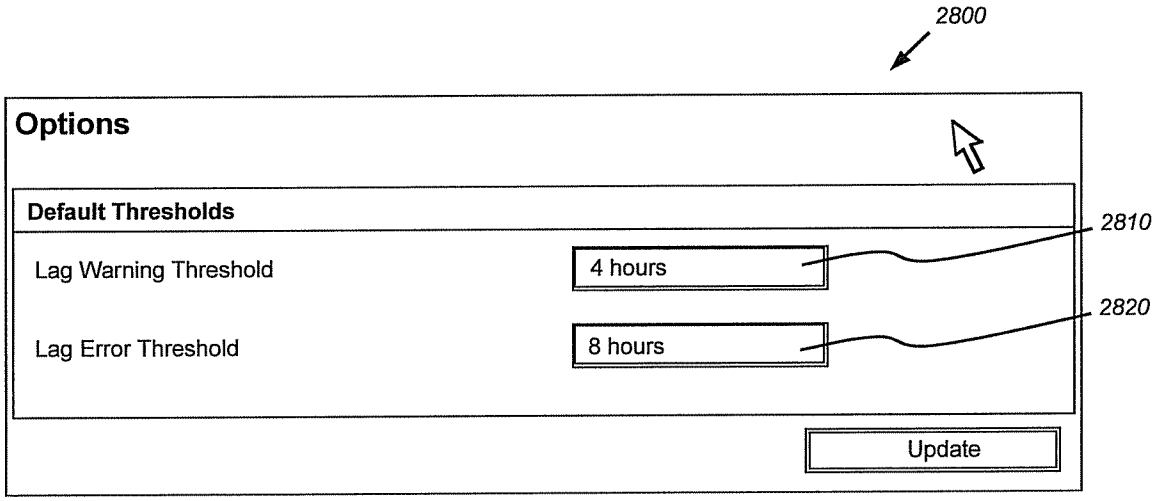
2800
Options
Default Thresholds
Lag Warning Threshold
4 hours
Lag Error Threshold
8 hours
Update
2810
2820

FIG. 28